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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/767,227

01/28/2004

William Welch

50269-0721

2598

73066

7590

03/18/2008

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EXAMINER

HOANG, HIEU T

ART UNIT

PAPER NUMBER

2152

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/767,227	Applicant(s) WELCH ET AL.	
	Examiner HIEU T. HOANG	Art Unit 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7, 21, 22, 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/27/2004 and 09/04/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the communication filed on 01/04/2008.
2. Claim 3 is canceled.
3. Claims 23 and 24 are new.
4. The terminal disclaimer filed on 01/04/2008 has been acknowledged and made of record.
5. Claims 1, 2, 4-7, 21-24 are pending.

Response to Amendments

6. The U.S.C. 112 rejection of claim 1 is withdrawn due to the amendments.

Response to Arguments

7. Applicant's arguments on the rejection of claims 1-7 and 22 have been fully considered but they are not persuasive.

In summary, the applicants argue that the prior art Shaffer does not teach "selecting a transfer rate that (a) does not exceed bandwidth apportioned to the particular data class that is not being used by the one or more other data streams; and (b) does not cause the transfer rate of the one or more data streams to go below minimum acceptable transfer rates of the one or more other data streams." The claim language clearly requires that selected rate or negotiated rate of a data stream, which is different from monitored rate (rate before negotiation), to be less than unused bandwidth of the data class. However, applicants' arguments that the prior art does not

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teach the claim invention are because the monitored rate in the prior art can cross certain rate thresholds associated with a data class of a stream. Shaffer teaches monitoring bandwidth per stream and negotiate the monitored bandwidth to create a negotiated bandwidth that conforms to certain rate thresholds. The monitored rate in the prior art can cross the certain rate thresholds; however, the negotiated rate would be in the range of the rate thresholds. Having pointed out the difference between monitored rate and negotiated rate of a data stream, the examiner therefore submits that applicants' arguments are unpersuasive.

8. Moreover, new prior art Packer is added to reject new limitations added to the claims, rendering applicant's arguments on the rejection of claims 1 and 22 moot in view of new ground(s) of rejection.

9. Applicant's arguments on the rejection of claim 22 have been fully considered but they are not persuasive. The new added limitation wherein "the plurality of acceptable transfer rates provided by plug-ins" is fully disclosed by prior art Shaffer (col. 3 lines 6-34, col. 4 lines 21-32, audio, video coding provides acceptable transfer rates (or bandwidth per stream) for each type of traffic, col. 5 lines 10-21, fig. 2 shows plug-ins as modules associated with each traffic type for selecting coding algorithms provided to the user device, each algorithm has an associated rate).

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. Numerous errors are found in claims 1-24. For example, for claim 22, it is unclear whether “a transfer rate” on line 11 is same as “a transfer rate” on line 10. It is unclear what is meant by “negotiating a transfer rate ... includes a means for selecting” (a method step includes a means) on line 10. “The transfer rates” and “the one or more other data streams” on line 13 lack antecedent basis. “Each data stream” on line 15 should be “the particular data stream”, etc. The claim recites “means for selecting a transfer rate that (a) does not exceed wherein the transfer rate is limited to ...” It is unclear what this limitation means. Correction of similar errors in remaining claims is required.

12. For claim 6, it is vague what is meant by determining an amount of unallocated bandwidth on the data network. If reading data network as the Internet, it is unclear how the invention would calculate unallocated bandwidth on the Internet. Correction is required.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 21 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Shaffer et al. (6,757,277, hereafter Shaffer).

15. For claim 21, Shaffer further discloses in a data network configured to transmit data streams at negotiated transfer rates, wherein each of a plurality of data streams has at least one attribute that associates the data stream with a particular data class, and wherein a negotiated transfer rate is limited to bandwidth apportioned to the data class of a data stream, the improvement comprising:

allocating bandwidth to the data streams by negotiating a transfer rate for each of the plurality of data streams from a plurality of acceptable transfer rates, the plurality of acceptable transfer rates provided by plug-ins prior to transmitting each data stream at the negotiated transfer rate (col. 3 lines 6-34, col. 4 lines 21-32, audio, video coding provides acceptable transfer rates (or bandwidth per stream) for each type of traffic, col. 5 lines 10-21, plug-ins are coding algorithms provided to the user device, each algorithm has an associated rate).

16. For claim 24, Shaffer discloses a method for allocating bandwidth of a data network to a plurality of data streams, comprising:

specifying apportionment of the bandwidth to a plurality of data classes (col. 5 lines 55-59, voice and data bandwidth allocation);

receiving a plurality of data streams for a plurality of plug-ins; wherein each plug-in of the plurality of plug-ins is associated with a data class of the plurality of data classes (fig. 2, video, audio, data modules are plug-ins);

wherein each data stream has at least one attribute that associates the data stream with one of the data classes (col. 3 lines 6-34, data stream inherently has information identifying whether it is audio, video or data);

from a plurality of acceptable transfer rates for each associated plug-in, negotiating a transfer rate for each data stream (fig. 2, col. 4 lines 41-63, each module negotiates which coding algorithm to use so that transfer rate is within thresholds);

wherein the transfer rate of the data stream for each plug-in is limited to the bandwidth apportioned to the data class associated with the particular plug-in (col. 5 lines 55-59, each stream transfer rate is limited by allocated rate of the class that the stream belongs); and

transmitting the data streams on the data network at the negotiated transfer rates (col. 5 lines 43-45, adjusting coding algorithm to negotiated rate and transmitting at that rate).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 1, 2, 4-7, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaffer, in view of Packer et al. (US 6,046,980, hereafter Packer).

19. For claim 1, Shaffer discloses a method for allocating bandwidth of a data network to a plurality of data streams, comprising:

specifying apportionment of the bandwidth to a plurality of data classes (col. 5 lines 57-58, data and voice bandwidth apportionment, col.4 lines 45-48, fig. 4, 5, bandwidth threshold X, Y of traffics);

receiving a plurality of data streams wherein each data stream of the plurality of data streams has at least one attribute that corresponds to one of the data classes of the plurality of data classes (fig. 2, receiving video, audio or data traffics are classes);

determining a particular data classes that corresponds to a particular data stream, wherein one or more other data streams that are associated with the particular data class are currently being transmitted (col. 3 lines 5-25, col. 5 lines 10-20, each stream's class is recognized by available or supported audio, video coding algorithms, col. 5 lines 61-62, many streams in one class).

Determining a plurality of acceptable transfer rates for the particular data stream, negotiating a transfer rate for the particular data stream from the plurality of acceptable

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transfer rates (col. 4 lines 21-32, col. 5 lines 10-20, audio, video coding algorithms provide acceptable transfer rates (or bandwidth per stream) for each type of traffic),

Wherein negotiating a transfer rate for the particular data stream includes selecting a transfer rate that

(b) does not cause the transfer rate of the one or more data streams to go below minimum acceptable transfer rates of the one or more other data streams (col. 6 lines 13-44, bandwidth is stepped up when current monitored rate falls below a threshold for all streams in a class); and

transmitting the particular data stream on the data network at the negotiated transfer rate (col. 5 lines 43-45, adjusting coding algorithm to negotiated rate and transmitting at that rate);

Shaffer does not explicitly disclose the transfer rate (a) does not exceed bandwidth apportioned to the particular data class that is not being used by the one or more other data streams;

However, Packer discloses that excess bandwidth can be allocated to a flow based on available bandwidth or bandwidth that has not been consumed (col. 13 lines 38-60)

It would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Shaffer and Packer to take advantage of available bandwidth resources that has not been consumed by allocating excess bandwidth to data stream as available (Packer, col. 13 lines 41-43).

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20. For claim 2, Shaffer-Packer discloses the invention as in claim 1. Shaffer-Packer further discloses the step of receiving comprises steps of: receiving stream annotations associated with each of the data streams; using a stream annotation associated with the particular data stream to select a plug-in of a plurality of plug-ins; activating the plug-in to receive each data stream (Shaffer, fig. 2, col. 3 lines 6-33, audio, video inherently has annotations in the header identifying sender, receiver, protocol type, codec type, resolution, quality etc., a plug-in is a coding software for each stream such as codec)

21. For claim 4, Shaffer-Packer discloses the invention as in claim 1. Shaffer-Packer further discloses the step of transmitting comprises steps of: transforming the particular data stream to the negotiated transfer rate (Shaffer, col. 3 lines 6-34, coding is transforming); and transmitting the data stream on the data network at the negotiated transfer rate (Shaffer, col. 5 lines 43-45).

22. For claim 5, Shaffer-Packer discloses the invention as in claim 4. Shaffer-Packer further discloses the step of transforming comprises a step of thinning, transcoding or decimating the particular data stream to the negotiated transfer rate (Shaffer, col. 3 lines 6-34, audio/video coding).

23. For claim 6, Shaffer-Packer discloses the invention as in claim 1. Shaffer-Packer further discloses the transfer rate is a first transfer rate, the method further comprising steps of: determining an amount of unallocated bandwidth on the data network (Shaffer,

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col. 5 line 58-col. 6 line 2); negotiating a second transfer rate for a first data stream, wherein the second transfer rate uses the unallocated bandwidth (Shaffer, col. 6 line 25-35, increasing bandwidth usage by using more bandwidth-required coding due to available bandwidth); transforming the first data stream to the negotiated second transfer rate; and transmitting the first data stream on the data network at the second transfer rate (Shaffer, col. 6 lines 34-35).

24. For claim 7, Shaffer-Packer discloses the invention as in claim 6. Shaffer-Packer further discloses steps of: receiving a second data stream; determining a second data class that corresponds to the second data stream; negotiating a third transfer rate for the first data stream, wherein the third transfer rate is limited to the bandwidth apportioned to the second data class; negotiating a fourth transfer rate for the second data stream, wherein the fourth transfer rate is limited to the bandwidth apportioned to the second data class; and transmitting on the data network, the first data stream at the third transfer rate and the second a second data stream at the fourth transfer rate (Shaffer, col. 5 line 22-col. 6 line 34, the second data stream and first data stream can just belong to a same class and their transfer rates can be adjusted to a third and forth transfer rate dynamically according to bandwidth threshold and maximum bandwidth of their class).

25. For claim 22, Shaffer discloses a system for allocating bandwidth of a data network to a plurality of data streams, comprising:

means for specifying apportionment of the bandwidth to a plurality of data classes (col. 5 lines 57-58, data and voice bandwidth apportionment, col.4 lines 45-48, fig. 4, 5, bandwidth threshold X, Y of traffics);

means for receiving a plurality of data streams (fig. 2, receiving video, audio or data traffics are classes);

means for determining a particular data class that corresponds to a particular data stream (col. 3 lines 5-25, col. 5 lines 10-20, each stream's class is recognized by available or supported audio, video coding algorithms, col. 5 lines 61-62, many streams in one class);

means for determining a plurality of acceptable transfer rates for the particular data stream (col. 3 lines 6-34, codecs for a plurality of available transmission rates for a audio/video flow);

means for negotiating a transfer rate for the particular data stream, wherein the transfer rate is a selected one of the plurality of acceptable transfer rates (col. 3 lines 6-34, col. 4 lines 21-32, audio, video coding provides acceptable transfer rates (or bandwidth per stream) for each type of traffic);

wherein negotiating a transfer rate for the particular data stream includes a means for selecting a transfer rate that (b) does not cause the transfer rate of the one or more data streams to go below minimum acceptable transfer rates of the one or more other data streams (col. 6 lines 13-44, bandwidth is stepped up when current monitored rate falls below a threshold for all streams in a class); and

wherein the transfer rate is limited to a portion of the bandwidth apportioned to the data class (col. 5 lines 55-59, maximum bandwidth of a data class is set); and

means for transmitting the data stream on the data network at the negotiated transfer rate (col. 5 lines 41-44, col. 6 lines 33-35, adjusting the codec and transmit at negotiated rate).

Shaffer does not explicitly disclose selecting the transfer rate that (a) does not exceed bandwidth apportioned to the particular data class that is not being used by the one or more other data streams;

However, Packer discloses that excess bandwidth can be allocated to a flow based on available bandwidth or bandwidth that has not been consumed (col. 13 lines 38-60)

It would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Shaffer and Packer to take advantage of available bandwidth resources that has not been consumed by allocating excess bandwidth to data stream as available (Packer, col. 13 lines 41-43).

26. For claim 23, Shaffer discloses a method for allocating bandwidth of a data network to a plurality of data streams, comprising:

apportioning the bandwidth to a plurality of data classes (col. 5 lines 57-58, data and voice bandwidth apportionment, col.4 lines 45-48, fig. 4, 5, bandwidth threshold X, Y of traffics);

receiving a plurality of data streams wherein each data stream has at least one attribute that associates the data stream with one of the data classes (fig. 2, receiving video, audio or data traffics are classes);

from a plurality of acceptable transfer rates, negotiating a transfer rate for each data stream, wherein the transfer rate is limited to the bandwidth apportioned to the data class associated with each data stream (col. 4 lines 21-32, col. 5 lines 10-20, audio, video coding algorithms provide acceptable transfer rates (or bandwidth per stream) for each type of traffic); and

transmitting the data streams on the data network at the negotiated transfer rates (col. 5 lines 43-45, adjusting coding algorithm to negotiated rate and transmitting at that rate);

receiving a particular data stream associated with a particular data class for which a particular amount of bandwidth has been apportioned (fig. 2, receiving video, audio or data traffics are classes, col. 5 lines 57-58, data and voice bandwidth apportionment);

Shaffer does not explicitly disclose:

determining that the particular amount of bandwidth is not sufficient for forwarding said particular data stream on said data network;

in response to determining that the particular amount of bandwidth is not sufficient, determining whether the bandwidth associated with at least one other data class is currently unused; and

in response to determining that bandwidth associated with the at least one other data class is currently unused, performing the steps of: dynamically reallocating

bandwidth from the at least one other data class to the particular data class; and forwarding the particular data stream on said data network.

Packer discloses soft isolation bandwidth allocation wherein unused bandwidth can be dynamically shared among different data classes (col. 14 lines 32-37, fig. 2A-2E, fig. 3, classifier, bandwidth manager, bandwidth allocation and de-allocation, fig. 4A, bandwidth pools).

It would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Shaffer and Packer to share bandwidth among different data classes using soft isolation as disclosed by Packer.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2152

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